Abstract #148

Monitoring Sediment Production and Transport at a Highway Construction Site

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Biographical Sketch of Author
Tim Diehl is a hydrologist in the Tennessee District Office of the U.S. Geological Survey. He's worked there since 1989 on a variety of geomorphic and hydrologic studies.

Abstract
The U.S. Geological Survey, in cooperation with the Tennessee Department of Transportation, and in partnership with Mactec Engineering, is monitoring runoff from areas disturbed by highway construction and temporarily stabilized.

Compliance monitoring along the highway right-of-way is carried out on each rainfall of 0.5 inch depth or more. Ten locations have siphoning samplers based on the U-59. These siphoning samplers have been designed for installation in shallow streams whose stage response to rainfall is slight. Each sampler incorporates a crest-stage gage. All samples are analyzed for total suspended solids and turbidity.

At three of these sampling stations, Sigma pumping samplers with pressure sensors collect samples at 15 - minute intervals and record the stage hydrograph.

Two gaging stations have been installed downstream from the highway project, one of which drains some of the temporarily stabilized areas. At these sites, continuous turbidity, temperature, and conductivity are recorded, and pumping samplers collect water samples.

Plans for future sampling include the use of the LISST-Portable instrument to measure suspended sediment concentration in the field, an expanded number of sites, and measurement of discharge at the sites along the right-of-way.